DRAFT REGULATORY EVALUATION, INITIAL REGULATORY FLEXIBILITY DETERMINATION, TRADE IMPACT ASSESSMENT, AND UNFUNDED MANDATES DETERMINATION

SUPPLEMENTAL NOTICE OF PROPOSED RULEMAKING

ANTIDRUG AND ALCOHOL MISUSE PREVENTION PROGRAMS FOR PERSONNEL ENGAGED IN SPECIFIED AVIATION ACTIVITIES (14 CFR 121)

OFFICE OF AVIATION POLICYAND PLANS
OPERATIONS REGULATORY ANALYSIS BRANCH
APO-310

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Executive Summary

The FAA is proposing to add language to the antidrug and alcohol misuse prevention program regulations to emphasize that each person who performs a safety-sensitive function is subject to testing and that those regulations also apply to those who perform a safety-sensitive function directly or by contract (including by subcontract at any tier) of a contract for an employer. To not test these employees would constrict the scope the testing requirement that all persons who perform a safety-sensitive function must be tested. The FAA would rescind all conflicting informal guidance regarding subcontractors upon publication of a final rule.

The FAA believes that we are not changing the current regulations, simply clarifying them. As such, there would be no additional costs. However, the FAA recognizes that, due to the conflicting guidance, some companies may have to modify their current antidrug and alcohol misuse prevention programs or implement such programs.

Although we believe that there would not be additional costs associated with this rulemaking, in an attempt to address concerns raised by some commenters to Notice 02-04, the FAA will apportion costs to this rule. The FAA will base these costs on an additional 2.5% of the maintenance workers being subject to the antidrug and alcohol misuse prevention programs. The FAA believes that the actual number would be less than this, but is using this number so as to be conservative and not underestimate costs. Accordingly, there would be additional costs in four areas – 1) testing, 2) training and education, 3) program development and maintenance, and 4) annual documentation. Over ten years, total costs sum to $3.52 million ($2.63 million, discounted).

The FAA acknowledges that there has not been an aviation accident directly attributed to an individuals misuse or abuse of drugs or alcohol. However, the FAA believes it is possible that the misuse of drugs or alcohol by members of the aviation community may have contributed to an accident. The FAA examined over a thousand accidents that list maintenance as either a cause or a factor in the accident report from January 1993 through December 2002; this examination showed 495 fatalities, 283 serious injuries, 430 minor injuries, 254 destroyed aircraft, 792

substantially damaged aircraft, and 3 aircraft with minor damages. The FAA believes it is prudent to base benefits on avoiding one part 135 accident over the next 20 years, thus avoiding in the next ten years, an estimated total of 2½ fatalities and half a destroyed airplane. These accidents, fatalities, serious injuries, and destroyed airplanes are about one percent or less of all maintenance-related accidents that had occurred over the last 10 years. In addition, some employees would cease misuse rather than face the consequences of being detected by testing. The FAA recognizes that the productivity of the maintenance workers subject to this rulemaking would also increase. The total benefits of this rulemaking over the next ten years would be $7.53 million ($5.29 million, discounted), far more than the costs of the proposed rule.

The proposed rule would not have an impact on international trade, a significant economic impact on a substantial number of small businesses, or contain any Federal intergovernmental mandates or private sector mandates that would require additional analysis.

I. Introduction and Background

In 1988, the FAA published a final rule, Anti-Drug Program for Personnel Engaged in Specified Aviation Activities (53 FR 47024), which required specified aviation employers to initiate antidrug programs for personnel performing safety-sensitive functions. This rule was the result of widespread public sentiment and belief that persons in safety-sensitive occupations should not be drug abusers.

This rule was modified in 1994 to incorporate specific requirements from the Omnibus Transportation Employee Testing Act of 1991 (the Act) (49 USC 45101, et seq.).[1] The Act also required the FAA, along with the Office of the Secretary of Transportation (OST), as well as the other DOT modal administrations to promulgate alcohol misuse prevention programs. In 1994, the FAA published a final rule, Alcohol Misuse Prevention Program for Personnel Engaged in Specified Aviation Activities (59 FR 7380), which required specific aviation employers to conduct alcohol testing.

The FAA issued an NPRM, Notice No. 02-04 (67 FR 9366; February 28, 2002), proposing administrative and clarifying the antidrug and alcohol misuse prevention program regulations, 14 CFR part 121, appendices I and J. The FAA subsequently published a final rule to effect these changes.

In Notice 02-04, the FAA proposed to clarify that each person who performs a safety-sensitive function directly for an employer is subject to testing and that each person who performs a safety-sensitive function at any tier of a contract for that employer is also subject to testing.[2] Several commenters stated that this was more than a clarifying change. The commenters suggested that there would be an economic impact from this proposed change. Therefore, the FAA removed this issue from the final rule and is considering them in this Supplemental Notice of Proposed Rulemaking (SNPRM), and is reopening the issue for public comment. All other issues and comments related to

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[1] Antidrug Program for Personnel Engaged in Specified Aviation Activities, (59 FR 42911).

[2] Many contractors use subcontractors, who in turn, use subcontractors, in the compilation of a contract. The phrase "at any tier" refers to all subcontractor levels.

Notice 02-04 were addressed and resolved in the aforementioned final rule.

II. The Supplemental Proposed Rule

In Notice No. 02-04, the FAA proposed to clarify that each person who performs a safety-sensitive function directly or by contract (including by subcontract at any tier) for an employer is subject to testing. The FAA stated that this was not a substantive change because the current rule language states that anyone who performs a safety-sensitive function "directly or by contract" must be tested. The regulations have always required that any person actually performing a safety-sensitive function be tested, and we were clarifying that performance "by contract" means performance under any tier of a contract. However, due to conflicting guidance given out by the FAA in the past, some maintenance providers may be confused about testing employees performing work under a subcontract. For a fuller discussion of previous guidance, see Notice 02-04 (67 FR 9369-9370).

The current FAA drug and alcohol testing regulations require the testing of anyone performing the specified safety-sensitive functions. The FAA believes that the potential reach of performing by "contract" is not limited to those who have a direct contract with the air carrier. In this SNPRM, the FAA is again proposing to emphasize that each person who performs a safety-sensitive function directly or by contract (including by subcontract at any tier) for an employer is subject to drug and alcohol testing. To do otherwise would constrict the scope of the testing requirement that all persons who perform a safety-sensitive function must be tested. The FAA will rescind all conflicting informal guidance regarding subcontractors upon publication of the final rule.

In addition, the FAA is proposing that if an individual has been performing safety-sensitive work under a subcontract and is not currently covered under an antidrug and alcohol misuse prevention program prior to the effective date of this regulation, the employer must conduct a pre-employment test and receive a negative test result on that individual

III. Cost of Compliance

In this analysis, the FAA estimated future costs for a 10-year period, from 2004 through 2013. As required by the Office of Management and Budget, the present value of this stream of costs was calculated using a discount factor of 7 percent. All costs in this analysis are in 2002 dollars.

Assumptions and Basic Data

As stated above, the FAA believes that we are not changing the current regulations, simply clarifying them. As such, there would be no additional costs. However, the FAA recognizes that, due to conflicting guidance, some companies may have to modify their current antidrug and alcohol misuse prevention programs or implement such programs. The FAA does not know how many additional employees or contractor companies would be subject to antidrug and alcohol misuse preventionprograms, but will base costs on the following assumptions:

- There are currently 1,207 contractors with antidrug and alcohol misuse prevention programs. Of these, 19 are temporary agencies[3] and/or security companies. The FAA believes the rest, 1,188, are noncertificated maintenance contactors,[4] and would be the most likely to be affected by this rulemaking.[5] Thus, the FAA assumes that the safety-sensitive employees affected by this rulemaking would be maintenance and preventive maintenance (hereafter referred to as "maintenance") workers;
- The FAA believes that the number of noncertificated maintenance contractor companies that would need to put together antidrug and alcohol misuse prevention programs and then implement them would increase. The FAA is

[3] Temporary companies, in this context, are companies that employ individuals such as mechanics and possibly flight attendants, which other companies use when they are temporarily in need of a particular specialty. These companies hold antidrug and alcohol misuse prevention programs and, therefore, the employees are covered so they can be contracted out to perform safety-sensitive duties.

[4] These companies are non-certificated because they have no operating certificates issued by the FAA. Certificate holders, such as part 121, 135 and 145s have operating certificates issued by the FAA and therefore, the FAA can track them. These companies (the non-certificated) do not have certificates, therefore, we cannot track them. Thus, such companies would have to register instead of obtain an Operations Specification (OpSpec).

[5] Office of Aerospace Medicine, September 2003.

basing costs on an increase of 25%, for an additional 297 contractors. The FAA believes that the actual number would be less than this, but is using this number so as to be conservative and not underestimate costs;[6]

- FAA data shows that in 2002, there were 212,240 maintenance workers for the aviation industry.[7] The FAA will base costs, in this analysis, on an additional 2.5% maintenance workers being subject to the antidrug and alcohol misuse prevention programs. The FAA believes that the actual number would be less than this, but is using this number so as to be conservative and not underestimate costs;
- The FAA estimates that the number of safety-sensitive employees in the maintenance sector grows at 1.5% per year.[8] Accordingly, there would be 218,655 maintenance employees in 2004, meaning that the FAA expects an additional 5,466 employees to be subject to these proposed rules;[9] thus each of these companies would have to test approximately 18 employees (calculation: 5,466 divided by 297). The fact that many of these companies have fewer than 18 employees underscores the FAA's belief that it is overestimating the number of employees who would be added under these proposals;
- These 18 employees are already working for the subcontractor company and providing safety-sensitive services to other companies at a higher tier; however, due to the conflicting guidance, they and the subcontractor company they are working for have not implemented testing. Program coverage can be calculated one of two ways; either the subcontractor company can elect to implement its own program or be covered under another company's program. If the subcontractor company obtains coverage under another established program, the cost would be less than implementing its own program.

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[6] Office of Aerospace Medicine, September 2003.

[7] This is made up of:
- part 121 - 77,658 employees;,
- part 135 - 21,160 employees;
- part 145 - 92,601 employees;
- part 135.1(c) - 127 employees; and
- Other - 20,694 employees.

[8] Regulatory Evaluation, Regulatory Flexibility Determination, Trade Impact Assessment, and Unfunded Mandates Determination, Final Rule, Antidrug and Alcohol Misuse Prevention Programs for Personnel Engaged in Specified Aviation Activities (14 CFR 121) (Alcohol RegEval), FAA, March 2003.

[9] This is calculated by multiplying 218,655 by 2.5%.

Thus, to be conservative and not underestimate costs, the FAA will base costs on subcontractors initiating and implementing their own programs.

- The FAA assumes that there would be two supervisors per contractor.[10] The attrition rate for mechanics that service general aviation is approximately 10 percent;[11] the FAA assumes the same attrition rate for their supervisors.
- Given a 1.5% increase in the number of maintenance employees, the total number of maintenance employees rises from about 218,700 in 2004 to about 250,000 in 2013, so the number of additional maintenance employees that the FAA believes would be covered by this rulemaking rises from about 5,500 in 2004 to 6,250 in 2013. The FAA does not know whether the 1.5% annual increase would be:
  a) solely in the number of employees, thus increasing the number of employees per company from 18.4 to 21.0,
  b) solely in the number of companies from 297 to 341, thus keeping the number of employees per company the same at 18.4, or
  c) some combination in the growth of both the number of employees and the number of companies.

  For the purposes of this analysis, the FAA will use c), assuming that the 1.5% growth is a combination of the two, so that while the number of employees grows at 1.5%, the number of additional companies grows at 0.75%, from 297 to 315 in 2013, and that the number of employees per company would also grow at 0.75%, from 18.4 to 19.8 in 2013. Table 1 shows the numbers of new companies, supervisors, employees, and employees per company covered in this analysis.

Table 1 – Companies, Employees, and Supervisors

Year	Companies	Total Employees	Employees per company	Supervisors	Non-Supervisory Employees
2004	297	5,466	18.4	594	4,872
2005	299	5,548	18.6	598	4,950
2006	301	5,632	18.7	602	5,030
2007	303	5,716	18.9	606	5,110

[10] Office of Aerospace Medicine, September 2003.

[11] U.S. Department of Transportation, Federal Aviation Administration, Pilot and Aviation Maintenance Technician Blue Ribbon Panel. Pilots and Aviation Maintenance Technicians for the Twenty-First Century, An Assessment of Availability and Quality. (Washington, D.C.: Government Printing Office, August 1993), Table 3.

2008	305	5,802	19.0	610	5,192
2009	307	5,889	19.2	614	5,275
2010	309	5,977	19.3	618	5,359
2011	311	6,067	19.5	622	5,445
2012	313	6,158	19.7	626	5,532
2013	315	6,250	19.8	630	5,620

The FAA also used the following cost and salary assumptions in this analysis:

- Price of a drug test - $45 [12]
- Price of an alcohol test - $34
- Time for a drug test (hours) - 0.75
- Time for an alcohol test (hours) - 0.75
- Maintenance employee salary - $31.85/hour [13]
- Maintenance supervisor salary - $38.22 [14]
- Instructors - $35.03 [15]
- Clerical - $17.93; [16]
- Administrative employee at subcontractor - $21/hour; [17] and
- The FAA assumes an instructor for every 20 supervisors and/or employees to be trained.

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[12] The source for the information on the drug and alcohol tests is the Office of Drug and Alcohol Policy and Compliance, in the Office of the Secretary of Transportation. This cost covers, among other things, collection of specimens, reporting, recordkeeping, and chain-of-custody procedures, as well as the cost of the technician.

[13] Searles, Robert, "Operations Planning Guide: Salary Survey," The McGraw-Hill Companies, Inc., 1999. The FAA used the salary of maintenance technician from the Summary Table, and then increased these salaries by 1.2345 to account for all fringe benefits and then divided by 2,080 to obtain the employee's hourly wage. This wage was increased by the Gross Domestic Product deflator.

[14] The FAA assumes that, on average, supervisors earn 20 percent more than their employees, so that their hourly salary would be $38.22.

[15] The FAA assumes that the instructors who teach the maintenance supervisors about the requirements of the alcohol misuse prevention and anti-drug requirements earn 10 percent more than maintenance personnel.

[16] Salaries for clerical and aviation-related company manager were obtained from Bureau of Labor Statistics, Employer Costs for Employee Compensation – March 2000, June 29, 2000, page 15, Table 10, http://stats.blw/govecthome.htm.

[17] This cost figure was calculated by the Office of Management and Budget to represent an average for all of the employees who might handle a document from clerical to administrative to managerial staff. Source: OST Office of Drug and Alcohol Policy and Compliance, "Drug and Alcohol Testing Program 83-C Submission," July 26, 2000. It was updated to reflect the inflation rate.

The FAA calls for comments on these assumptions, particularly on the number of additional employees and non-certificated companies and requests that all comments be accompanied by full documentation

All employees who are subject to antidrug testing would be subject to the following types of tests – pre-employment, random, post-accident, reasonable cause, and return to duty and follow-up testing. All employees who are subject to alcohol misuse prevention program testing would also be subject to these tests with one exception, most employees are not subject to alcohol pre-employment tests. Based on historical data,[18] the FAA used the following percentages to calculate the number of additional tests, as shown in Table 2:

Table 2 – Testing Rates for Maintenance Employees

Type of Test	Alcohol Misuse Prevention Program	Antidrug Program
Pre-Employment[19]	0.32%	24.74%
Random	10.00%	25.00%
Post-Accident	0.06%	0.13%
Reasonable Cause	0.04%	0.09%
Return to Duty	0.04%	0.20%
Follow-Up - Current Year[20]	0.18%	0.95%
Follow-Up - Subsequent Year	0.18%	0.76%

[18] Office of Aerospace Medicine, September 2003 – use of data from 1999 to 2001.

[19] For 2004, the pre-employment testing rate for the anti-drug program would be 100 percent, as all existing employees, working for these subcontractors, would need to be tested. After 2004, the percentage would drop to 24.74%.

[20] For follow-up testing for drugs and alcohol, the requirement is the same, which is at least six tests in the 12 months following the employee's return to duty. The requirements also state that follow-up testing shall not exceed 60 months after the date the individual begins to perform or returns to the performance of a safety-sensitive function. The amount of testing is determined by a Substance Abuse Professional (SAP). The SAP may terminate further testing after the first six tests have been conducted if he/she determines that no further testing is necessary.

Based on historical data, the FAA is basing costs, for the alcohol misuse prevention program, on a total of 10 tests, 5 done in the year that the infraction occurred and 5 in the subsequent calendar year. For the anti-drug program, the FAA is basing costs, based on historical data, on 9 tests, 5 done in the year that the infraction occurred and 4 in the subsequent calendar year.

Two of the cost analyses described below, testing costs and employee training costs, involve all employees, both supervisors and non-supervisors. For these two sets of calculations, the FAA used a weighted wage rate applicable to all employees, based on the information in Table 1, as shown in Table 3:

Table 3 – Weighted Wage Rates					
	2004	2005	2006	2007	2008
Hourly Wage	$32.54	$32.53	$32.53	$32.52	$32.52
	2009	2010	2011	2012	2013
Hourly Wage	$32.51	$32.51	$32.50	$32.50	$32.49

A total of 866 companies submitted MIS (FAA Drug Testing Management Information System Data Collection Form) reports for 2001. There is also an alcohol MIS form and the same companies also submitted those forms, as well. According to the DOT summary, these 866 companies had 450,770 employees. The other companies, 6,334, did not report because each had fewer than 50 safety-sensitive employees, and thus were not required to report.

The 866 reporting companies included 313 with fewer than 50 employees, having a total of 4,161 safety-sensitive employees. The 313 companies represent a random sample that the Office of Aerospace Medicine selected, as is the custom. Assuming that the companies in the random sample were representative of all companies having fewer than 50 employees, the FAA estimated that 6,334 non-reporting companies had a total of 84,204 employees.

The FAA used the above numbers to estimate the total number of safety-sensitive employees in the industry. Table 4 shows the breakdown in the 866 companies that submitted data for the 2001 MIS reports between the 313 companies with fewer than 50 employees and all other reporting companies:

Table 4 – Number of Covered Companies and Safety-Sensitive Employees				
	Covered Companies		Safety-Sensitive Employees	
Data in the 2001 MIS reports		866		450,770
Companies with Fewer than 50 Employees	*313*		*4,161*	

All Other Reporting Companies	*553*		*446,609*	
Non-Reporting Companies (With fewer than 50 Employees)		6,334		84,204
TOTAL, All Companies		7,200		534,974

Testing Costs

Table A-1 in the Appendix shows both the increase in the total number of maintenance employees and those additional maintenance employees covered by this analysis from 2004 to 2013. Given testing percentages shown in Table 2, this translates into an additional 582 alcohol-misuse tests and 5,466 drug tests in 2004, an additional 600 alcohol-misuse tests and 2,878 drug tests in 2005 rising to 676 and 3,242 tests, respectively, 2013.[21] [22] The cost of the alcohol misuse tests and drug tests would be $19,800 and $310,900 in 2004, and then $20,400 and $129,500, respectively in 2005, rising to $23,000 and $145,900, respectively, in 2013,[23] while the cost of the employees' time would be $14,200 and $168,600, respectively in 2004, and then $14,600 and $70,200, respectively, in 2005 rising to $16,500 and $79,000,[24] respectively, in 2013. Over ten years, the total costs of the additional alcohol misuse tests sums to $369,200 and of the drug tests sums to $2.39

[21] The higher number of drug tests in 2004 vis-à-vis the other years is due to the assumption that 100 percent of all employees would be tested under pre-employment testing that year, dropping to 24.74 percent in subsequent years.

[22] This is derived by multiplying the number of new maintenance employees to be covered by the percentages shown in Table 2 and summing them for the two types of testing programs, alcohol misuse prevention and anti-drug. In 2004, the number of alcohol pre-employment tests would be 18 (5,466 x 0.32%), random tests would be 547 (5,466 x 10%), post-accident would be 3 (5,466 x 0.06%), reasonable cause would be 2 (5,466 x 0.04%), return to duty would be 2 (5,466 x 0.04%), and follow-up for the current year would be 10 (5,466 x 0.18%). And, in 2004, the number of drug pre-employment tests would be 5,466 (5,466 x 100%), random tests would be 1,367 (5,466 x 25%), post-accident would be 7 (5,466 x 0.13%), reasonable cause would be 5 (5,466 x 0.09%), return to duty would be 11 (5,466 x 0.20%), and follow-up for the current year would be 52 (5,466 x 0.95%).

[23] This is derived by multiplying the number of tests by $34 for the alcohol misuse prevention program tests and by $45 for the anti-drug program tests. For example, in 2004, the cost would be the number of alcohol tests (582) times $34 per test, which equals $19,788.

[24] This is derived by multiplying the number of tests by three-quarters of an hour times the applicable weighted wage rate shown in Table 3. For example, in 2004, the number of alcohol tests (582) times 0.75 hours times $32.54 per test equals $14,204.

million. Over ten years, the costs for the additional testing sums to $2.76 million ($1.99 million, discounted).

Training and Education Costs

For both the antidrug and alcohol misuse prevention programs, the employer must train each supervisor who would make reasonable cause/suspicion determinations. This training must be at least 60 minutes for each program. Supervisors must also receive training on the effects and consequences of drug use on personal health, safety, and work environment, as well as the manifestations and behavioral cues that may indicate drug use and abuse. The regulations do not specify the amount of time associated with this training; for this rulemaking, the FAA assumes 30 minutes.

Supervisors must also receive recurrent supervisory training; however this is only mandated by the antidrug rule and not the alcohol misuse prevention program rule. The rules do not say when this must occur or how long the training should be; however, FAA has recommended recurrent training every 12 to 18 months. For this rulemaking, the FAA assumes that this recurrent training occurs every 12 months and takes 60 minutes.

As shown in Table A-2 in the Appendix, there would be an additional 594 supervisors in 2004, rising to 630 in 2013.[25] Due to the assumed 10% turnover, a total of 653 new supervisors would need to take initial training in 2004, costing $37,400 in supervisor time.[26] The cost for the 33 instructors would be $1,700 for their time.[27] Due to industry growth and turnover within the companies, the FAA assumes that, in the following year, only the new supervisors would have to take the initial training; in 2005, this would sum to 64 supervisors, costing $3,700 for

[25] This is derived by multiplying the number of newly covered contractor companies by 2. So, in 2004, the number of new maintenance supervisors would be 594 (297 x 2).
[26] The FAA assumes a 10% turnover rate. So, in the first year, the number of supervisors needing to be trained would be 594 plus 59 (10% x 594) or 653. Given an hourly salary of $38.22 and 2½ hours of class, total costs would be $37,436 (653 x $38.22 x 1.5 hours).
[27] The 653 supervisors would require 33 instructors (653/20, rounded up). The cost for 33 instructors would be $1,734 (33 x $35.03 x 1.5 hours).

their time and $200 for the 4 instructors.[28] Over ten years, initial training costs sum to $71,200 for supervisor time and $3,600 for the instructors.

Recurrent training would begin in 2005, as 534 supervisors would need to spend an hour in this training, costing $20,400, and the cost for the 27 instructor's time would be about $900.[29] Over ten years, recurrent training costs sum to $188,700 for supervisor time and $8,800 for the instructors. The total costs, over ten years, for training supervisors, sums to $272,300 ($193,900, discounted), as can be seen in Table A-2.

All employees need to be trained as to the requirements of the antidrug program. The numbers of companies, as well as the employees and supervisors taking part in the different programs can be seen in Table A-3 and the program costs can be seen in Table A-4 in the Appendix. For the antidrug program, the FAA has told industry that they needed to do some form of "interactive" training (by interactive CD-ROM, instructor, teleconference, etc.). The FAA assumes an average of 60 minutes for the antidrug training. There is no recurrent training for the antidrug program.

For the alcohol misuse prevention program, there is a requirement to provide current educational materials to safety-sensitive employees. These materials average ten to fifteen pages. For the purposes of this analysis, the FAA will assume that twelve pages are used and that they would be photocopied, at a cost of 10 cents a page, for a total cost per package of $1.20. With 5,466 new employees in 2004, costs would be $6,600 that year.[30] As the number of new employees increases from 82 in 2005 to 92 in 2013,

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[28] As shown in Table 1, there would be an additional 2 companies in 2005, equating to an additional 4 supervisors. Applying the 10% turnover rate to the 598 supervisors (299 companies x 2 supervisors) equals an additional 60 supervisors to be trained. Multiplying 64 (4 new and 60 from turnover) supervisors time 1.5 hours times $38.22 equals $3,669. Given one instructor for every 20 supervisors, rounding up, the 64 supervisors would need 4 instructors; multiplying 4 instructors times 1.5 hours time $35.03 equals $210.

[29] The number requiring recurrent training equals the number of supervisors from the year before minus the turnover rate for the current year. So, in 2005, there would be 534 supervisors needing recurrent training (calculation: 594 in 2004 minus 60). The costs would equal $20,409 (534 x $38.22 x 1 hour). Given one instructor for every 20 supervisors, rounding up, 27 instructors would be needed for these 534 supervisors, at a cost of $946 (27 x $35.03 x 1 hour).

[30] This is calculated by multiplying 5,466 times $1.20 cents.

annual costs would be around $100 to $110; total ten year costs sum to $7,500. The FAA assumes that it would take no more than half an hour per employee to read the material. Given 5,466 employees in 2004, reading time costs would be $88,900.[31] As the number of new employees increases from 82 in 2005 to 92 in 2013, annual costs rise from $1,300 to $1,500; total ten year costs sum to $101,700.

As noted above, the training time for the antidrug program would be one hour, so the cost for each employee would be the weighted wage rate shown in Table 3 above; given 5,466 employees in 2004, training costs would be $177,900.[32] As the number of new employees increases from 82 in 2005 to 92 in 2013, annual costs rise from $2,700 to $3,000; total ten year costs sum to $203,400.

The FAA assumes, for the purposes of this analysis, that 80% of the companies would use videotapes or written materials followed by a question and answer session. These sessions may have a person available by phone or at the training session, at a cost of $25 per hour.[33] The training could be conducted by the company or through a consortium or third party administrator. The videotapes can cost anywhere from $0 to $100 (in some cases, free videos are available from county drug education programs).[34] For the purposes of this analysis, the FAA will use an average cost of $50 per videotape, and that an average of 20 employees take this training at the same time. The remaining 20% are likely to be using a live instructor, at a cost of $35.03 per hour, and each class of 20 employees would have one instructor.

For those companies using videos, the FAA assumes that each company would obtain a video only once and use the same one in subsequent years. First year costs would be $11,800,[35] while subsequent year costs would be $80 each.[36] Ten year costs for videos sums to $12,600. These companies would need 219 people available in 2004 to oversee or monitor the

[31] This is the product of 5,466 employees and the wage rate of $32.54 times half an hour.
[32] This is the product of 5,466 employees and the wage rate of $32.54.
[33] Office of Aerospace Medicine, September 2003.
[34] Office of Aerospace Medicine, September 2003.
[35] This is obtained by multiplying 297 companies times $50 per video times 80%.
[36] This is obtained by multiplying 2 companies times $50 per video times 80%.

classes and answer questions, costing $5,500.[37] As there is no recurrent training requirement, only new employees would need to see this video in subsequent years, so the number of overseer/monitors would decrease to four each year, costing $100 per year; ten-year costs for these overseers/monitors sums to $6,400.

For those companies using an instructor, 55 instructors would be needed in 2004, costing $1,900,[38] while 2 instructors would be needed, on average, in subsequent years for the new employees, costing under $100 per year.[39] Ten year costs for instructors sum to $11,200.

Ten year costs for the required employee training sums to $334,100 ($301,400, discounted).

All companies would be required to establish education programs for both the antidrug program and the alcohol misuse prevention program. The education program for the antidrug program must include: the display and distribution of information material, display and distribution of a community service hot-line telephone number, and the display and distribution of the employer's policy regarding drug use in the workplace. The alcohol misuse prevention program must explain the alcohol misuse prevention program requirements and its policies and procedures with respect to meeting those requirements.

Based on historical data, the FAA expects that it would take each company two hours to establish each education program.[40] Thus, in 2004, for the 297 new companies, costs for each program would total $12,500,[41] while for the two additional new companies in the subsequent years, costs for each program would be $100. Total ten year costs for each program sums to $13,200, for a total of $26,500 ($24,300, discounted).

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[37] This is calculated by dividing 4,373 employees (80% of 5,466) by 20 employees per classroom, rounding up and multiplying by $25.

[38] Rounding up, the 1,093 employees (20% of 5,466) would need 55 instructors; multiplying 55 instructors times 1 hour time $35.03 equals $1,927.

[39] Less than 20 employees would need an instructor-led class, but it is unlikely that all these employees would be available at the same time, so the FAA is assuming 2, rather than 1, instructor; multiplying 2 instructors times 1 hour time $35.03 equals $70.

[40] Office of Aerospace Medicine, September 2003.

[41] This is calculated by multiplying 297 companies by 2 hours by $21 an hour.

As can be seen in Table A-5 in the Appendix, over ten years, total training and education costs sum to $682,700 ($560,000, discounted).

Program Development & Maintenance Costs

In the economic evaluation to the 1994 alcohol rule,[42] the FAA estimated that program development costs would need a minimum of 16 additional administrative hours for a small Part 121 or 135-certificate holder, at $21 per hour. The FAA believes that the administrative burden on subcontractors would be less than or equal to those of small Part 121 or 135-certificate holders, and so the FAA would use 16 hours to compute start-up program development costs; the costs for each subcontractor would be $336. The bulk of these program development costs would take place in 2004 as 297 companies would develop their programs at a cost of $99,800. In each of the subsequent years, the costs for the two additional companies would be $672. Total ten year costs sum to $105,800 ($97,400, discounted).

Each of these subcontractors would need to register with the FAA that they now do antidrug and alcohol misuse preventing testing, and so they would have to spend time to produce information required for their registration and submit it to the FAA. The FAA estimates that each submission would take 20 minutes at $21 per hour. Total first year costs would be $2,100.[43] The FAA estimates that it would take 20 minutes to process new submissions and other amendments; total annual costs for these sum to $150 in each year after 2004.[44] [45] Ten year costs, in the private sector, equal $3,500 ($2,900, discounted).

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[42] Alcohol RegEval

[43] This is obtained by multiplying the number of certificate holders, 297, times one third of an hour times the salary of $21 per hour.

[44] In the Regulatory Evaluation to the recent final rule, the FAA identified 343 part 135.1(c) operators and 1,228 contractors that will be affected by these rule changes; the contractors include 21 ATC contractors, providing services for the ATC contract towers, and 1,207 other contractors, for a total of 1,571 facilities and contractors. The FAA assumed that, in every year after 2004, these facilities and contractors would file 105 amendments per year and that 104 new companies would submit new plans each year. In this rulemaking, the FAA bases costs on 297 new subcontractors. As this is 19% of the number used in the final RegEval (calculation: 297/1,571 = 19%), the FAA will assume 20 amendments per year (calculation: 105 x 19%) and as discussed above, 2 new companies submitting plans each year.

At the FAA, the submitted information would have to be processed. An administrative assistant, a FG-7 being paid at $22.66 per hour,[46] would enter this information into a database. The FAA assumes that the administrative assistants would need 10 minutes to input the information. First year costs would be $1,100,[47] while each subsequent year cost would be about $100;[48] costs over ten years sum to $1,900 ($1,600, discounted).

Over ten years, total program development & maintenance costs sum to $111,200 ($101,800, discounted), as shown in Table A-6 in the Appendix.

Annual Documentation Costs

As discussed above, a company's supervisory personnel who makes reasonable cause testing determinations must receive specific training on specific indicators of probable drug use. The antidrug regulations require each company to document both the initial and recurrent training. The FAA costs this documentation out at $1.2858 per record.[49] As shown in Table A-2, 653 supervisors would be taking initial training in 2004, 64 would be taking initial training and 534 would be taking recurring training, for a total of processing records for 598 supervisors in 2005, etc. Hence, this documentation would cost $840 in 2004 (calculation: 653 x $1.2858), $769 in 2005, etc., summing to $7,900 ($5,600, discounted) over ten years.

The same sort of documentation is needed for the supervisors who determine whether reasonable suspicion

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[45] This is obtained by summing two separate activities, each taking one third of an hour at $21 per hour:
- Annual amendments filed - 20; and
- Annual number of new companies – 2.

Hence, 22 times $21 times 1/3 equals $154.

[46] The annual 2002 salary for a FG-7 is $35,582. Multiplying by 1.3245 and dividing by 2080 hours yields $22.66 per hour.

[47] This is obtained by multiplying the number of certificate holders, 297, times one sixth of an hour times the salary of $22.66 per hour.

[48] This is obtained by summing two separate activities, each taking one sixth of an hour times $22.66 an hour:
- Annual amendments filed - 20; and
- Annual number of new companies – 2.

[49] The FAA, along with the other DOT modes, are directed by DOT to price record creation at $1.145, record filing at $ 0.118, and record storage at $0.0228 for all documents related to the alcohol misuse prevention program and the anti-drug program.

exists concerning probable alcohol misuse. As discussed above, there is no recurrent training, so there is only a requirement to document initial training. As shown in Table A-2, 653 supervisors would be taking this training in 2004, 64 would be taking this training in 2005, etc. Hence, this documentation would cost $840 in 2004 (calculation: 653 x $1.2858), $82 in 2005, etc., summing to $1,600 ($1,300, discounted) over ten years.

As discussed above, employees also need to be trained as to the requirements of the antidrug program. The antidrug regulations require documentation of this training. As above, the FAA costs this documentation out at $1.2858 per record. As shown in Table A-3, 5,466 employers would be taking this training in 2004, 82 would be taking this training in 2005, etc. Hence, this documentation would cost $7,028 in 2004 (calculation: 5,466 x $1.2858), $105 in 2005, etc., summing to $8,000 ($7,200, discounted) over ten years.

Companies would have to document all reasonable suspicion cases. As shown in Table 3, 866 companies reported information on their 2001 MIS forms. The 866 companies conducted 254 reasonable suspicion tests, or 29.33% of reporting companies conducted such tests. Thus, in 2004, given 297 new companies to be considered in this analysis, 87 companies (calculation: 297 x 29.33%) would report such tests, at a cost of about $100.[50] Costs, over ten years, sum to $1,200 ($800, discounted).

The aforementioned 866 companies conducted 221 post-accident alcohol tests, or 25.51% of reporting companies conducted such tests. Thus, in 2004, given 297 new companies to be considered in this analysis, 76 companies (calculation: 297 x 25.51%) would report such tests, at a cost of about $100.[51] Costs, over ten years, sum to $1,000 ($700, discounted).

If a post-accident alcohol test is not administered within 2 hours following the accident, the employer has to document this, stating the reasons the test was not promptly administered. The aforementioned 866 companies reported that they conducted 460 post-accident drug tests and 221 alcohol post-accident tests reported. The

[50] Multiplying 87 companies by $1.2858 per record equals $112.
[51] Multiplying 76 companies by $1.2858 per record equals $98.

difference, 239, or 27.6%, is the number of alcohol tests not performed in two hours. Thus, in 2004, given 297 new companies to be considered in this analysis, 82 (calculation: 297 x 27.6%) companies would report such tests, at a cost of about $100.[52] Costs, over ten years, sum to $1,100 ($800, discounted).

If a post-accident alcohol test is not administered within 8 hours following the accident, the employer has to document this, stating the reasons the test was not promptly administered. If a post-accident alcohol test is not administered within 8 hours following the accident, the employer has to cease attempts to administer such a test and must document this. The FAA did not have this information reported, and so used the same number, 239, or 27.6%, as the number of alcohol tests not performed in eight hours. Thus, in 2004, given 297 new companies to be considered in this analysis, 82 companies would report such tests, at a cost of about $100.[53] Costs, over ten years, sum to $1,100 ($800, discounted).

Each company must notify the FAA within 5 working days of any employee subject to antidrug testing who refused to be tested.[54] The FAA received 37 such refusals out of the 7,200 covered companies, which averages out to 0.51% of all covered companies sending in a report. Applying this percentage to the 297 new companies to be considered in this analysis yields an average of 2 reports in 2004 (calculation: 0.51% x 297). Each notification takes 0.25 hours, so the cost, in 2004, would be $11.[55] In each subsequent year, there would be 2 reports, so the cost per year would be $11; ten year costs sum to about $100 ($70, discounted).

When a person who holds an FAA issued part 67 airman medical certificate has a positive drug test result, the Medical Review Officer (MRO) needs to send a positive drug test report regarding that individual to the FAA within 12 working days after verifying a positive drug test result. The FAA received 39 such reports from the 7,200 covered

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[52] Multiplying 82 companies by $1.2858 per record equals $105.
[53] Multiplying 82 companies by $1.2858 per record equals $105.
[54] Companies are not required to report refusals to submit to pre-employment or return to duty testing for either anti-drug or alcohol misuse prevention programs.
[55] This is obtained by multiplying 2 companies times 0.25 hours times $21.

companies, which averages out to 0.54% of all covered companies sending in a report. Applying this percentage to the 297 new companies to be considered in this analysis yields an average of 2 reports in 2004 (calculation: 0.54% x 297). Each notification takes 0.25 hours, so the cost, in 2004, would be $11.[56] In each subsequent year, there would be 2 reports, so the cost per year would be $11; ten year costs sum to about $100 ($70, discounted).

Each company must notify the FAA within 5 working days of any employee subject to alcohol misuse prevention program testing who refused to be tested. The FAA received 13 such refusals out of the 7,200 covered companies, which averages out to 0.18% of all covered companies sending in a report. Applying this percentage to the 297 new companies to be considered in this analysis yields an average of 1 report in 2004 (calculation: 0.18% x 297). Each notification takes 0.25 hours, so the cost, in 2004, would be $5.[57] In each subsequent year, there would be 1 report, so the cost per year would be $5; ten year costs sum to about $50 ($40, discounted).

When a person who holds an FAA issued part 67 airman medical certificate has an alcohol test result of 0.04 or above, the employer needs to send a reports to the FAA within 2 working days after the alcohol test result. The FAA received 22 such reports from of the 7,200 covered companies, which averages out to 0.31% of all covered companies sending in a report. Applying this percentage to the 297 new companies to be considered in this analysis yields an average of 1 report in 2004 (calculation: 0.31% x 297). Each notification takes 0.25 hours, so the cost, in 2004, would be $5.[58] In each subsequent year, there would be 1 report, so the cost per year would be $5; ten year costs sum to about $50 ($40, discounted).

As shown in Table A-7 in the Appendix, over ten years, annual documentation costs sum to $21,200 ($16,700, discounted).

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[56] This is obtained by multiplying 2 companies times 0.25 hours times $21.

[57] This is obtained by multiplying 1 company times 0.25 hours times $21.

[58] This is obtained by multiplying 2 companies times 0.25 hours times $21.

Table 5 shows total ten-year costs summing to $3.52 million ($2.63 million, discounted). Table A-8 in the Appendix shows year-by-year costs for each of these categories.

Table 5 - Total Ten Year Costs		
Cost Category	Total Costs	Discounted Costs
Testing	$2,757,499	$1,987,985
Training & Education	$632,836	$519,576
Program Development & Maintenance	$111,174	$101,790
Annual Documentation	$21,220	$16,669
Total Costs	**$3,522,728**	**$2,626,020**

IV. Analysis of Benefits

The FAA's objective in proposing a supplemental notice of proposed rulemaking requiring testing of each person who performs a safety-sensitive function directly or by contract (including by subcontract at any tier) is to foster an environment free of drug and alcohol misuse for personnel engaged in critical aviation safety occupations. The public expects, and is entitled to, an environment free of illegal drug use and alcohol misuse in aviation.

The major benefits of this proposal would come from improved safety. The program would act directly to prevent employees from going on duty after they have used illegal drugs or are impaired by alcohol and would deter the on duty use of these substances.

The FAA concludes that two specific sets of benefits would accrue from these proposals. The first is the prevention of potential injuries and fatalities and property losses resulting from accidents attributed to illegal drug use or neglect or error on the part of individuals whose judgment or motor skills may be impaired by the presence of alcohol. The second is the potential reduction in absenteeism, lost worker productivity, medical costs, and improved general safety in the work place by the deterrence of illegal drug use and/or alcohol misuse.

Illegal drug use and/or alcohol misuse, while rare, have been involved in some aviation accidents. A review of the safety record indicates that a fatal accident involving a passenger-carrying commercial airline occurred where the

pilots used illegal drugs; a Continental Express flight crashed near Durango, Colorado, on January 19, 1988. Cocaine and cocaine metabolites were found in the captain's body. No official determination has been made as to whether or not the amount of cocaine taken by the captain was sufficient to impair his flying abilities or whether the captain or the copilot was at the controls at the time of the accident. In 1983, a fatal accident occurred involving an all-cargo aircraft, operating under part 135, where the pilot and copilot were found to have been exposed to marijuana. No determination has been made that drugs were the causative factor in this accident.

On October 26, 1995, there was an accident over Paint Rock, Texas; an airplane crash involving a Beech 65-B80 where "the pilot's impairment of judgment and performance due to alcohol which resulted in his improper decision to shutdown an engine, and his failure to maintain adequate airspeed for single-engine flight."[59] Since 1975, there have been ten commercial air taxi cargo accidents and one non-scheduled charter carrier accident where alcohol was determined, by NTSB, to be one of the factors contributing to the accident, but not the cause of it. In addition, there have been several accidents where the investigators found traces of alcohol in the deceased pilot or the copilot, but were unable to determine if all of that alcohol was as a result of the normal decomposition process. In March 1990, before the FAA promulgated alcohol testing, three commercial pilots were arrested for operating a common carrier while under the influence of alcohol in violation of federal alcohol law. All three were subsequently convicted and, based on test results, all three would have been in violation of the alcohol testing regulations.

The FAA believes it is possible that the misuse of drugs or alcohol by members of the aviation community may have contributed to additional accidents or incidents. The FAA acknowledges the fact that there have not been any aviation accidents directly attributed to a maintenance worker misusing or abusing drugs or alcohol. However, as Tables A-10 and A-11 in the Appendix show, maintenance employees have among the highest positive rates on alcohol and drug tests among aviation-related employees, so the connection between illegal drug use and alcohol misuse and maintenance

[59] NTSB report number 20001207X04682.

related accidents certainly could exist. It is important to note that not only are maintenance workers rarely tested after an accident (as Table 2 shows, only 0.06% and 0.13% of maintenance workers are administered post-accident alcohol and drug tests, respectively), but it would be difficult to directly tie poor maintenance work, due to illegal drug use or alcohol misuse, to an accident that may occur weeks or months later, particularly to all the contract workers at all the different tiers.

To this end, the FAA searched the National Aviation Safety Data Analysis Center (NASDAC) databases for accidents and incidents that list maintenance as either a cause or a factor in the accident report. This initial search produced 1,581 accidents and incidents from January 1993 through December 2002. The FAA modified this list by eliminating the following elements:

- Accidents that list either unknown, no person specified, Fixed Base Operator (FBO) personnel, or an unqualified person in the subject person field;
- Accidents that did not list anything in the subject person field or were duplications due to multiple causes or factors;
- Accidents that listed pilot-in-command or owner/builder in the subject person field if either of these were not a certificated repairman because, while they are subject to antidrug and alcohol misuse prevention testing, they are not the object of these proposals;
- All incidents.

The final list of 1,055 accidents is listed in the docket for this rulemaking. To be fully inclusive the FAA included the accidents in which there were no injuries or the aircraft did not receive any damage to illustrate what the damage potential would be if something else went wrong. Over the ten years, this list revealed 495 fatalities, 283 serious injuries, 430 minor injuries, 254 destroyed aircraft, 792 substantially damaged aircraft, and 3 aircraft with minor damages. In addition, in these accidents, there were 3,468 people who sustained no injuries and 6 aircraft that suffered no damages.

Most of these accidents involved general aviation (GA), flying under part 91. Specifically, over this 10 year look back period, there were 876 accidents, resulting in 246 fatalities, 219 serious injuries, and 311 minor injuries, with 222 destroyed airplanes, 650 substantially damaged aircraft, and 2 aircraft with minor damages. Of these 876

accidents, 146 resulted in at least one fatality, 63 resulted in at least two fatalities, 158 resulted in at least one serious injury, 22 resulted in at least one fatality and one serious injury, and 2 resulted in at least one fatality, one serious injury, and one minor injury. In virtually every case, the airplane was either destroyed or substantially damaged.

Among part 121 airplanes, there were 27 accidents, resulting in 200 fatalities, 11 serious injuries, 39 minor injuries, with 2 destroyed airplanes and 21 substantially damaged aircraft. Of these 27 accidents, 3 resulted in at least one fatality, 3 resulted in at least two fatalities, 1 resulted in at least one serious injury, and 6 resulted in at least one fatality and one serious injury. In 85% of the cases, the airplane was either destroyed or substantially damaged.

Among part 135 airplanes, there were 63 accidents, resulting in 35 fatalities, 35 serious injuries, 50 minor injuries, with 11 destroyed airplanes and 51 substantially damaged aircraft. Of these 63 accidents, 12 resulted in at least one fatality, 6 resulted in at least two fatalities, 11 resulted in at least one serious injury, and 5 resulted in at least one fatality and one serious injury. In virtually every case, the airplane was either destroyed or substantially damaged.

Included in these accidents are the Alaska Airlines accident on January 31, 2000 (88 fatalities), the ValuJet accident on May 11, 1996 (110 fatalities), the Atlantic Southeast Airlines flight, operating on behalf of Delta Airlines, accident on August 21, 1995 (8 fatalities, 13 serious injuries and 8 minor injuries), and the general aviation accident involving a Beech B90 aircraft on January 5, 1994 (10 fatalities). All of these accidents listed a maintenance error as a cause, and in the case of the ValuJet accident, a subcontractor was involved. It is also important to note that all of the above accidents, except for the Beech B90 accident, are cited throughout the Office of Inspector General’s audit report on Air Carrier’s Use of Aircraft Repair Stations issued on July 8, 2003. It is also believed that the accident, resulting in 21 fatalities, on January 8, 2003 involving an Air Midwest flight, operating on behalf of US Airways, was caused by a maintenance related error. However, the final report on this January 2003 accident has not yet been issued.

The FAA currently uses a value of $3.0 million to statistically represent a human fatality that is avoided. This value provides the public and government officials with a benchmark comparison of the expected safety benefits of rulemaking actions over an extended period of time with estimated costs in dollars. A serious injury is valued at $580,700 and a minor injury is valued at $42,900. These estimates were revised in 2002.[60]

As noted above, there were 6 part 135 accidents that resulted in at least two fatalities over the last ten years, or an average of about 1 every 2 years. The actual number of fatalities from these accidents summed to 29, or an average of about 5 fatalities per accident. Using the aforementioned benchmark values to measure the benefits of avoiding each accident yields $15 million in fatalities avoided.[61]

This analysis contains benefits resulting from not having to repair or replace damaged or destroyed aircraft. Accidents in which maintenance errors were either a cause or a factor involved all types of aircraft from gliders to Boeing 767's. The most frequently cited aircraft in all part 135 accidents was the Piper; the average retail value for a 1978 Piper PA-31-350, the value is $241,000.[62] The restoration cost for a fixed-wing air carrier aircraft is 13.5%. Therefore, the restoration cost for this Piper would be $32,500 (calculation: $241,000 x 0.135).[63] There were about five times as many substantially damaged aircraft as destroyed aircraft, so that the average aircraft cost of an accident is $67,279.[64]

Over the last ten years, there were 63 part 135 accidents attributable to maintenance as either a cause or a factor

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[60] U.S. Department of Transportation, Federal Aviation Administration, Office of Aviation Policy, Plans, and Management Analysis Bulletin dated February 2002 (APO-02-1)

[61] Avoiding the average of one accident every two years halves these benefits to $7.5 million in fatalities avoided per year.

[62] Aircraft Bluebook Price Digest, Winter 2002/2003 Volume 02-04, . As this aircraft was produced from 1973 to 1984, the FAA took 1978 as the average price.

[63] Economic Values for Evaluation of Federal Aviation Administration Investment and Regulatory Programs, displayed in Table 5-5 on page 5-7.

[64] This is calculated by multiplying $241,000 by one sixth (for the destroyed aircraft) and $32,535 by five sixths (for the substantially damaged aircraft).

in the NTSB accident report, or an average of 6 a year. Of these 63, 6 of them had at least two fatalities per accident, with the average such accident averaging 5 fatalities per accident. As discussed above, while there have been no documented aviation accidents directly attributed to the misuse or abuse of drugs or alcohol, the FAA believes it is possible that such misuse or abuse may have contributed to aviation-related accidents. Accordingly, the FAA believes it is prudent to base benefits on avoiding one such part 135 accident over the next 20 years, thus avoiding in the next ten years, a total of 2½ fatalities and half a destroyed or damaged airplane. These number of accidents, fatalities, and destroyed airplanes are less than 1% of all maintenance-related accidents that had occurred; the FAA considers these benefits to be reasonable.

The total benefits of this rulemaking were calculated by assuming an equally likely chance of avoiding these accidents in each of the next ten years. Total benefits sum to $7.53 million ($5.29 million, discounted) as displayed in Table A-9 in the Appendix.[65]

In addition, there would be some productivity gains. The FAA recognizes that the productivity of the maintenance workers subject to this rulemaking will increase. Based on previous analyses, the FAA assumed that those employees who misuse drugs and/or alcohol reduce individual employee productivity by 5 percent. Some of these employees would cease misuse rather than face the consequences of being detected by testing. The FAA hypothesizes that the presence of random testing programs would have the effect of deterring some of these employees. This analysis assumes that 10 percent of the commercial aviation population affected by the rule that uses illegal drugs and misuses alcohol would stop misusing drugs and alcohol (assumed to be 1%) and increase their productivity in the face of this testing, given the consequences of being caught.

These individuals are expected to continue in their jobs without using illegal drugs or misusing alcohol. The FAA assumes that these individuals are 95% effective on their

[65] The 2½ fatalities avoided are costed out at $7.5 million. Since benefits are based on avoiding half an accident over ten years, the FAA divided the replacement cost of the aircraft, $67,279, by two to obtain $33,640 over ten years, or $3,364 per year.

jobs compared to employees who don't misuse either substance on the job. Thus, each individual who is deterred from abusing alcohol or drugs is expected to achieve a 5% increase in productivity. Given the number of employees subject to this testing each year, the FAA estimates an additional 5 or 6 employees per year would see a 5% increase in their productivity.

Many certificate holders already have some form of drug and alcohol misuse prevention program in place. These programs include alcohol awareness programs, Employee Assistance Programs (EAP), and Human Intervention and Motivation Study (HIMS) programs. Accordingly, some reduction in alcohol and drug misuse can be attributed to these programs.

V. Comparison of Costs and Benefits

This action would include maintenance employees who perform safety-sensitive functions directly or by contract (including by subcontract at any tier) for an employer. Due to previously issued conflicting guidance, some companies may have to modify their current antidrug and alcohol misuse prevention programs, or, some non-certificated contractors may have to put together programs. The FAA based costs on an additional 2.5% maintenance workers as well as about 300 additional companies being subject to the antidrug and alcohol misuse prevention programs. The FAA believes that the actual number of employees and companies would be less than this, but is using these numbers so as to be conservative and not underestimate costs. Ten-year costs, which include additional costs in four areas: testing, training and education, program development and maintenance, and annual documentation sum to $3.52 million ($2.63 million, discounted).

The FAA acknowledges the fact that there has not been an aviation accident or incident attributed to an individuals use of illegal of drugs or misuse of alcohol. However, the FAA believes it is possible that the use of illegal drugs or misuse of alcohol by members of the aviation community may have contributed to some accidents, and so the FAA analyzed over a thousand accidents that list maintenance as either a cause or a factor, from January 1993 through December 2002. This analysis showed 495 fatalities, 283 serious injuries, 430 minor injuries, 254 destroyed

aircraft, 792 substantially damaged aircraft, and 3 aircraft with minor damages. The FAA believes it is prudent to base benefits on avoiding one part 135 accident over the next 20 years, thus avoiding in the next ten years, a total of 2½ fatalities and half a destroyed airplane. This number of accidents, fatalities, serious injuries, and destroyed airplanes are about one percent or less of all maintenance-related accidents that had occurred over the last 10 years. Considering that the FAA assumed, in the cost section, an increase of 2.5% in the number of maintenance workers to be tested annually and of 25% in the number of companies to be included in the testing programs, the FAA considers these benefits to be both conservative and reasonable.

In addition, the FAA recognizes that the productivity of the maintenance workers subject to this rulemaking would increase; some of these employees would cease misuse rather than face the consequences of being detected by testing. The total benefits of this rulemaking over the next ten years would be $7.53 million ($5.29 million, discounted).

As benefits exceed the costs, the FAA finds these proposed rule changes to be cost-beneficial.

VI. Comments

The FAA received numerous comments to Notice No. 02-04 on the topic of testing at any tier. The FAA did not address such comments in the final rule action for that Notice, but has chosen to address them in this rulemaking. Two commenters, Aeronautical Repair Station Association and 14 other entities (hereinafter referred to as “ARSA”) and Pratt & Whitney (a subsidiary of United Technologies), went into great detail about the cost impact of testing maintenance employees who perform safety-sensitive functions directly or by contract (including by subcontract at any tier), the FAA wrote to these commenters to request additional information about these cost impacts. Both ARSA and Pratt & Whitney responded, providing additional information. Given the scope of their concerns and the cost data they provided, the FAA will address their initial and subsequent comments in detail.

A. General Comments

1. Estimate of Number of Affected Entities:
Several commenters believed that the FAA did not adequately take into account the number of affected entities for this rulemaking because we did not consider the number of employees working for subcontractors at any tier. Many commenters were concerned that every employee at a company would need to receive negative results on their drug and alcohol tests before beginning work on a safety sensitive project.

Some commenters were concerned that this rulemaking would result in an increase of costs to the companies. Considering that some contractors cross-utilize their employees, it is possible that all employees would be required to be tested at both aviation-oriented companies and non-aviation-oriented companies to comply with this rulemaking. Some commenters believe that companies would test an employee in anticipation of winning a future contract that may require that employee's expertise, while that employee is not currently performing a safety sensitive function, and the contractor company would not want to risk losing the contract over this issue. One commenter offered a scenario in which 92 additional companies could be subject to this requirement because they are currently non-certificated sub-contractors; this commenter believed that these companies are not subject to the current rule.

Another commenter offered a scenario dealing with how several contractor companies can be involved in an engine overhaul for a major air carrier. This commenter asserts that these contractor companies specialize in different areas of maintenance leading to a long chain of subcontracting. For example, the main contractor, hired by the air carrier to perform the overhaul, would work on the parts of the engine its company specializes in and then send the remaining parts to a subcontractor company, which would work on another segment. This process can involve several contractor companies, some of which may not be aware that they are performing safety-sensitive work for a major air carrier. The commenter believed that enforcing this rule would lead to major additional costs.

Recently ARSA and AIA surveyed their members to determine the number of entities that would be affected by this final

rule. ARSA estimated that approximately an additional 5,000 non-certificated entities would now be required to implement antidrug and alcohol misuse prevention testing programs.

FAA's Response:
The FAA did not conduct an economic evaluation regarding the subcontractor issue in Notice 02-04 because we believed the proposed change was merely clarifying. After reviewing the comments, we decided to apportion costs to this proposed change, in an effort to respond to the concerns of the commenters.

In a separate letter, the FAA requested documentation from ARSA and Pratt & Whitney to assist us in validating the information pertaining to costs they felt would result from this rulemaking. Both ARSA and Pratt & Whitney provided written responses. Their responses were considered in preparing the economic analysis of this SNPRM. In another part of this section, the FAA discusses ARSA's and Pratt & Whitney's concerns.

2. Significant Impact on a Substantial Number of Small Entities:
Many commenters stated concerns about the increased financial burden on small entities as a result of this rulemaking. One commenter claims that it would cost approximately $190 per person[66] during the pre-hire phase of employment, which is based upon their current program costs, or $38,000 for a company with 200 employees.

The Regional Airline Association (RAA) is concerned that this rulemaking would impose significant financial and administrative burdens on their air carrier members. RAA asserts that their members would be unnecessarily testing employees that never perform safety-sensitive functions, resulting in unnecessary costs to carriers.

FAA's Response:
The FAA disagrees with the commenters cost claim of $190 per person. Specifically, the FAA disagrees with the estimate of two hours to take the test and the hourly wage rate of $60.

[66] This is comprised of:
- Administrative fee of $6.00 per person, per year;
- Initial (prehire) specimen collection fee $20.00 per person;
- Initial (prehire) laboratory test $44.00 per person; and
- Pay contractor for 2 hours lost for each test at conservative hourly rate of $60.00, $120.00 per person.

In the cost analysis above, the FAA uses 0.75 hours for the drug test and $31.85 as the hourly wage rate for a maintenance employee. In addition, the FAA notes that air carriers should not be testing employees that never perform safety-functions. This rulemaking simply emphasizes that each person who performs a safety-sensitive function is subject to testing and that those rules also apply to those who perform a safety-sensitive function directly or by contract (including by subcontract at any tier) for an employer. Thus, these costs would not be a function of this proposal.

The FAA does not believe that this rulemaking would impose significant financial and administrative burdens on RAA's air carrier members; as shown in the Regulatory Flexibility Determination, the cost impact on the average company would be about $1,100 annually. The testing costs would only be for employees who perform safety-sensitive functions, not for all employees.

3. Other Cost Related Comments:

Some commenters were concerned that some of their subcontractors would cease to do business with them because aviation work represents a small part of their business; thus, complying with this regulation would not be worth the additional cost. Others were concerned about losing business with a major air carrier due to the amount of time their employees would have to take for testing before safety sensitive work could begin. Most of these commenters were also concerned of a ripple effect of increased costs from the sub-contractors to cover the increased costs of establishing and maintaining an antidrug and alcohol misuse prevention testing program. They claim that this ripple effect would eventually be passed on to flying public in the form of higher airfare prices. A commenter claims that a repair now costing $100, may cost thousands of dollars to replace a single unit due to the ripple effect.

One commenter claims that if they lost their major plating subcontractor because the contractor refused to conduct testing, it would cost the commenter approximately $300,000 to purchase and install a large sodium cyanide based plating operation in-house necessary to perform certain tasks that they currently contract out. Some commenters claimed that repairs typically covered under a warranty plan would be unavailable as a result this rulemaking because the companies who would normally perform these repairs would not conform to this policy. A commenter claims that the additional cost of purchasing and installing new equipment would be a result from warranty repairs no longer being performed.

FAA's Response:
The analysis for this rulemaking only addresses the additional costs imposed on companies regardless of whether the companies choose to absorb or pass on the costs of this rulemaking. With respect to the $300,000 to purchase the sodium cyanide based plating equipment, this purchase is not a requirement of this rulemaking. Covered entities have a number of options in terms of conforming to these rules, including joining the prime contractor's antidrug and alcohol misuse prevention program and joining a consortium to minimize the cost impact. Also, the FAA cannot understand why a warranty would not be honored.

4. Barriers/Obstacles to Doing Business in the Aviation Industry:
Some commenters explained that only a small share of their business is aviation-related and that it would not be viable to perform aviation work if the FAA proposed rule is adopted. Manufacturers of components largely for non-aviation markets, such as cabin entertainment components, (e.g., televisions, VCRs, coffee makers, etc.) would not want to subject all their employees to drug testing. They argued that one of the ramifications would be replacement of inoperative systems with new systems rather than paying for subcontractors for maintenance. In other words, if a part of a coffeemaker were to break an air carrier would elect to replace the entire coffee maker instead of paying a subcontractor an additional fee to repair the coffeemaker.

FAA's Response:
In taking on new work, each company weighs the benefits and the costs of each task, and calculates their profit potential accordingly. As noted above, this rulemaking simply emphasizes that each person who performs a safety-sensitive function is subject to testing and that those rules also apply to those who perform a safety-sensitive function directly or by contract (including by subcontract at any tier) of a contract for an employer. So, the requirement, and these costs, already exist and are not a result of this rulemaking. It is possible, due to the aforementioned conflicting guidance, that there would be additional incremental costs for some individual employers. However, given the objective of having each person who performs a safety-sensitive function be tested to ensure that he or she is not impaired, this is a necessary cost of doing business in the aviation industry.

5. Foreign Repair Stations:
Several of the commenters identified entities that may be unintentionally exempt from the rule. One commenter states that the new language in the proposed rule would create a regulatory gap, exempting foreign repair stations, and manufacturers, while requiring non-certificated maintenance subcontractors, previously excluded under FAA guidance and regulations, to comply. Other comments suggest that the proposed rule would send more work overseas and across the borders where the antidrug and alcohol rules do not apply and therefore reduce the economic survivability of domestic maintenance providers.

FAA's Response:
As stated above, this rulemaking simply emphasizes that each person who performs a safety-sensitive function is subject to testing and that those rules also apply to those who perform a safety-sensitive function directly or by contract (including by subcontract at any tier) for an employer. So, the requirement already exists and is not a result of this rulemaking. Thus, it is the existing drug and alcohol rules, as codified in Appendixes I and J, and not this proposed rule, that would, or would not, have any effect on foreign commerce.

B. ARSA and Pratt & Whitney Comments

1. ARSA's Comments:
ARSA raised a number of issues in their comments dated July 29, 2002. Based on their concerns, the FAA sent a subsequent request for data on December 20, 2002, which was responded to by ARSA on January 31, 2003; these correspondences will be discussed and summarized below.

In general, the group believed that the proposal did not adequately consider the costs and benefits or the impact on small entities. They believe that this proposal would be a significant change in the rules, particularly for the non-certificated entities, bringing about significant increases in costs. In their letter, they stated that there was no discussion, in the Regulatory Evaluation, of the cost impacts of requiring non-certificated subcontractors to be tested; the FAA did not evaluate the costs and other impacts associated with testing at any tier of the contract. ARSA surveyed their membership, from which they garnered data from 325 members to support their claims:

1) ARSA's July 29, 2002 comments stated that many more repair stations would be included in antidrug and alcohol misuse prevention programs because the repair stations might have to perform maintenance without knowing that their work deals with an air carrier's equipment. They go on to assume that if 3,250 repair stations would be covered by the new rules, each of ARSA's cost estimates should be multiplied by 10 to show the total estimated cost.

2) ARSA also stated that the 325 repair stations claim to collectively use about 5,000 non-certificated maintenance subcontractors, which averages about 15 per repair station.

3) Based on the information from their survey, ARSA identified the following costs:

- Over $2.5 million in initial costs to cover those production workers that actually perform, or are available to perform, a subcontracted maintenance function;
- More than $1.0 million annually to test production workers that are not currently being tested;
- $2.25 million for the initial costs of ensuring that these testing rules are being complied with by downstream Part 145 subcontractors;
- $2.2 million for the recurring requirement costs that flow to certificated downstream providers;
- $4.2 million to ensure that downstream non-certificated subcontractors are complying with these testing rules; and
- $1.45 million for the recurring requirement costs that flow to non-certificated downstream providers.

4) ARSA claims that the FAA's estimates do not include the costs associated with the dislocations that would occur if non-certificated companies withdrew from supporting the industry.

FAA's Response:

In order to better understand and respond to ARSA's comments, the FAA wrote a letter in December 2002, for clarification of our concerns about the data and its use as well as requesting additional information. This letter addressed the first 3 of ARSA's aforementioned concerns. As will be noted below, the fourth and last of ARSA's

comments, the costs associated with companies withdrawing from the industry, is an area that neither the FAA nor ARSA can accurately predict the consequences of. Consequently, the FAA did not request additional information on this topic from ARSA.

1) The FAA questioned ARSA's multiplying their cost estimates by a factor of 10; this would only be valid if the repair stations that answered the survey accurately reflect the repair station industry. The FAA asked if the 325 repair stations responding to the survey were chosen by a statistically valid random process and/or do they accurately reflect the spectrum of all repair stations.

2) The FAA was concerned that some of these repair stations use the same non-certificated maintenance subcontractors; the 5,000 subcontractors estimated may include substantial duplication. So, after eliminating duplication, the FAA needed to know how many total non-certificated maintenance subcontractors were used by these 325 repair stations? In addition, it was not clear if any of the non-certificated subcontractors currently have FAA-approved drug and alcohol testing programs or are currently covered under other programs. The FAA requested specific information about each of the 325 repair stations and these non-certificated maintenance subcontractors.

3) To get information about the cost components that added up to the above numbers, each totaling in the millions of dollars, the FAA requested information, such as:

- The number of production workers that actually perform, or are available to perform, a subcontracted maintenance function;
- The different personnel in each repair station who would be involved in ensuring that the drug and alcohol rules are being complied with by downstream Part 145 subcontractors for initial and recurring costs;
- The different personnel at each downstream non-certificated maintenance subcontractor who would be tested; and
- The testing-related tasks that each of the above personnel would perform, the number of hours that each of the above personnel would need to spend on each set of tasks, and their wage rates.

4) The FAA was unable to include costs from any potential dislocations because the Agency cannot predict the future

in terms of if these non-certificated companies would withdraw from supporting the industry, and, how many would.

ARSA responded by letter dated January 31, 2003 to the FAA's questions in numbers 1 through 3, but their response did not provided substantive answers. In addition to their letter, they included a survey form with the final tabulation of all the results received. They noted in their letter that the vast majority of respondents completed the survey over the web. These final tabulations provided the basis for their cost estimates, which, they claim, would be substantial.

Unfortunately, providing the compilation of 325 answers to a survey does not answer the FAA's concerns about the submitted data or provide the basis for substantive policy changes or analysis. While the FAA fully respects the needs for privacy and to protect data supplied by the respondents, without more specificity, the FAA is unable to accept or use ARSA's numbers. For instance, the FAA has no idea how representative these 325 companies are of the entire industry, or, in fact, if some of the data was entered more than once. Without documentation showing that these 325 repair stations accurately reflect the spectrum of all repair stations, drawing inferences for the impact on the entire industry cannot be substantiated.

Similarly, the FAA is unable to get answers for our second major question, on needing documentation specifying who the 5,000 non-certificated maintenance subcontractors are. Without such documentation, it is easy to see that the same non-certificated maintenance subcontractor could be used by several repair stations, and so would be entered into ARSA's survey results multiple times by different repair stations. Similarly, the survey results do not show the number of such subcontractors that do not currently have FAA mandated drug and alcohol testing programs or are not currently covered under other programs. Without knowing a more exact number of the total number of non-certificated maintenance subcontractors or how many do or do not currently have testing programs, the FAA cannot use ARSA's data or extrapolate their results to the entire industry.

ARSA's data shows, for instance, $2.25 million for the initial costs of ensuring that the drug and alcohol rules are being complied with by downstream Part 145 subcontractors; this is based on the answers to survey

question 14(a). This is equivalent to each of the 325 respondents needing to spend $6,900. However, there are many ways for costs to add up to $2.25 million; it is possible that a few of the larger respondents made up the bulk of these costs, while other respondents had little or no such cost. In addition, there is no way to know the assumptions that the survey respondents used. For instance, the FAA would need to know, for at least some of the repair stations, how many employees would be involved, what their salaries are, and how many hours they would be needed. The answers to all three of these variables would differ depending on the size of the company. Without more documentation and without knowing the make-up of the respondents, the FAA is unable to use this data.

2. Pratt & Whitney's Comments:

Pratt & Whitney (PW), a subsidiary of United Technologies Companies (UTC), also provided economic comments in a letter dated July 18, 2002. They claimed that the costs to one of UTC's divisions alone could cost $900,000, and that the costs, for the first year, of known, quantifiable factors, to UTC would be $6 million.

1) Their letter calculated the testing costs for the 4,500 manufacturing employees who would be added to PW Aftermarket Services testing pool. They estimated $784,000 for additional initial pre-employment testing costs, and $137,000 for random testing costs. In addition, for the 1,000 additional covered employees in non-PW UTC repair stations, they estimated $174,000 for additional initial pre-employment testing costs, and $31,000 for random testing costs.

2) They estimated the total subcontractors first year costs for initial UTC administrative costs at $4,692,000, with $2,496,000 coming in the form of initial costs. The components included:

- $1,896,000 in initial costs for 316 subcontractors with part 145 certificates (or $6,000 per subcontractor);
- $192,000 in initial costs for 16 subcontractors - original equipment manufacturers (or $12,000 per subcontractor);
- $408,000 in initial costs for 34 subcontractors - non-certificated entities (or $12,000 per subcontractor); and
- $2,196,000 in recurring costs for all 366 subcontractors.

3) They included both initial and recurring costs as costs incurred in the first year of compliance with the rule; as most recurring costs occur after the first year of compliance, this could represent their overstating costs.

FAA's Response:

In order to better discuss and respond to PW's comments, the FAA wrote a letter dated December 20, 2002, for clarification of our concerns about their data as well as requesting additional information. For all these questions, the FAA requested documentation of PW's numbers.

1) The FAA asked general questions about the testing costs and number of employees:
a) PW's letter did not specify what the per-test cost is; assuming that the same costs for the pre-employment testing for all employees equates to $175 per test.
b) What is the total number of employees involved in the manufacturing area; PW had noted 4,500 manufacturing employees?
c) What percentage of the total work in that manufacturing operation is the result of maintenance-related work sent by their part 145-certificate holder?

2) The FAA asked for the cost components that added up to PW's submitted numbers, including:

- Are any of the 316 subcontractors with part 145 certificates currently covered;
- Why is the cost per contractor twice as high for the original equipment manufacturers and non-certificated entities as compared to the part 145 certificate holders;
- What is the number of workers involved at each subcontractor or category of subcontractor;
- What is the number of hours that each of the above personnel would need to spend on each set of testing-related tasks – both initial and recurring;
- What are the wage rates of these personnel; and
- What are the assumptions about the other costs, such as new equipment and training for such equipment.

3) The FAA asked PW for the rationale for including both initial and recurring costs in the initial year of compliance.

The FAA received an answer dated February 19, 2003. However, PW requested that we not submit their answer to the public docket in this rulemaking because the company believed that the information that they provided contained "confidential commercial and financial information." In accordance with 14 CFR section 11.35(b), we have noted in the docket that we received the letter, but we have not placed this letter in the docket. Because the February 19, 2003 letter reiterated much information from the July 2002 letter that was already in the public docket, the FAA contacted PW for clarification of the proprietary nature of the content of the letter. In a letter dated February 16, 2004, PW highlighted the specific information that they considered to be proprietary. This Regulatory Evaluation will analyze the data from the July 18, 2002 letter to the public docket. After reviewing PW's proprietary information, we have determined that we can meaningfully analyze the economic impact of this proposed rule without considering the specific proprietary information submitted by PW in this situation.

1) The FAA estimates that both a drug test and an alcohol test would require 45 minutes; this time includes both the transit time to and from the testing site as well as the time for the test. As noted above, the FAA estimates that the average drug test costs $45. In their original letter of July 18, 2002, PW estimated $784,000 for additional initial pre-employment testing costs for the 4,500 manufacturing employees who would be added to PW Aftermarket Services testing pool. Assuming that the same testing cost per employees yields a per test cost of about $175 (calculation: $784,000 divided by 4,500). Subtracting $45 for the drug test and dividing by the hour and a half (the sum of 45 minutes for each test) yields an hourly wage of $86.67, which the FAA believes to be much higher than an average starting maintenance employee makes. Even if the average drug test were to take as long as two hours, subtracting $45 for the drug test and dividing by this amount of time would yield an hourly wage of $65, which the FAA believes to be still much more than an average starting maintenance employee makes.

Applying a 25% random drug testing and 10% random alcohol testing rate to the aforementioned 4,500 employees results in 1,125 drug and 450 alcohol annually, totaling 1,575 tests annually. At noted above, the FAA uses $45 for drug tests and $34 for alcohol tests; multiplying the number of

tests by the costs for these tests yields total testing costs of $50,625 and $15,300 for the drug and alcohol tests, respectively, totaling $69,925. Subtracting this from the $137,000 that PW claimed, in their original letter, for random testing costs leaves $71,075 for the testing, which takes 45 minutes. Dividing $71,075 by 1,575 tested employees for 45 minutes yields an hourly wage of about $60; it is interesting that PW assigned a lower hourly wage to established maintenance employees, who are subject to random testing, than to starting maintenance employees, taking a pre-employment test. In either event, both hourly wages are higher than the industry average of $31.85.

2) As UTC does not know the additional costs for each tier of subcontracting, it is difficult to generalize their actual historical data to other companies with multiple layers of contractors.

a) UTC states that it does not know how many of the 316 part 145 subcontractors have an antidrug and alcohol program. They know that some part 145 subcontractors do have programs, but they do not know if their sub-tier subcontractors have programs. Since UTC admits that some unknown number of subcontractors have programs, the FAA does not understand, then, how UTC can project costs for all these subcontractors.

The FAA believes that an air carrier auditing its maintenance contractors is an excellent business practice and can be an excellent way to determine if an entity (at any tier) not only has a drug and alcohol program, but also is implementing its programs and testing its employees. However, the FAA program does not require audits. Hence, the FAA rejects UTC's contention that it must perform due diligence audits of sub-tier maintenance providers.

b) UTC maintains that it would be required to ensure that any sub-tier contractor for which it has responsibility is in full compliance with the requirements. However, without knowing how many subcontractors need programs to be set up and how many subcontractors' programs are functioning properly, it is difficult to understand how UTC's costs were derived and how accurate they are. UTC claims that their cost estimates are based on actual, historical expense for several due diligence audits. But without knowing the state of the subcontractors that they would be

examining, how can UTC translate the costs from these audits into estimating their total costs?

While there might be a greater likelihood that the part 145 repair stations would have an established program and others would be required to develop programs and/or become part of an established program, that does not explain why UTC used a factor of two, thus doubling the cost of the certificated repair stations to the uncertificated. Without a rationale or documentation as to why UTC doubled the cost, it is hard to use or accept their cost estimates. Simply accepting their experience as a rationale for their submitted costs makes it difficult for the FAA to know how to use their data in projecting costs across the industry, especially as UTC claims that it does not know how many part 145 repair stations have established programs.

c) The FAA appreciates UTC's conundrum in calculating the number of additional employees who would be affected. However, an approximation would have been helpful, both for use in its own analysis and as a way to check the authenticity of UTC's cost estimates, and thus apply it to other companies.

d) As noted above, in its answer to 1), the FAA believes that UTC's time estimates for pre-employment and random testing are too high. However, the amount of time that the supervisors would spend off the job, two additional hours of initial training and another hour for recurrent training, is correct and is reflected in this analysis.

e) The FAA recognizes that there are many types of employees and that they command different salaries, based on the variables that UTC listed. However, this is true with all companies and in all cases, so it is normal for an analysis to calculate an average salary, often simply by adding up all of the employee's wages and dividing by the number of employees. UTC's failure to provide such an average makes it more difficult to judge the veracity of its cost estimates and makes it difficult to apply their cost data to other parts of the industry. The FAA uses average salaries from the different occupations so as to calculate costs and make cost projections.

f) The FAA looks at and tries to examine all relevant cost variables. Each company's programs are different, and if UTC or any of its subsidiaries or subcontractors needed to

purchase new equipment for an antidrug or alcohol misuse prevention program, such as a breathalyzer, or requires training for such equipment, these are costs that need to be noted, examined, and included in an analysis.

3) The FAA acknowledges that there some of the recurring costs may occur in the initial year of the program. While there may be some overlap, the FAA believes that including all of the recurring costs in the initial year would overstate overall costs; given the amount of time it would take to set up the program, most companies would not be able to put the full amount of resources needed for the recurring costs components of their program in the first year.

Accordingly, the FAA cannot use these submitted comments to estimate the number of new programs that would need to be set up, the number of employees that would be covered, or the cost of these rules.

VII. Initial Regulatory Flexibility Determination

The Regulatory Flexibility Act of 1980 (RFA) establishes "as a principle of regulatory issuance that agencies shall endeavor, consistent with the objective of the rule and of applicable statutes, to fit regulatory and informational requirements to the scale of the business, organizations, and governmental jurisdictions subject to regulation." To achieve that principle, the RFA requires agencies to solicit and consider flexible regulatory proposals and to explain the rationale for their actions. The RFA covers a wide-range of small entities, including small businesses, not-for-profit organizations and small governmental jurisdictions.

Agencies must perform a review to determine whether a proposed or final rule will have a significant economic impact on a substantial number of small entities. If the agency determines that it will, the agency must prepare a regulatory flexibility analysis as described in the Act.

However, if an agency determines that a proposed or final rule is not expected to have a significant economic impact on a substantial number of small entities, section 605(b) of the 1980 RFA provides that the head of the agency may so certify and a regulatory flexibility analysis is not required. The certification must include a statement

providing the factual basis for this determination, and the reasoning should be clear.

For this rule, the small entity group is considered to be part 145 repair stations (SIC Code 4581, 7622, 7629, and 7699). The FAA has been unable to determine how many of the part 145 repair stations and their subcontractors are considered small entities. However, as noted in the Assumptions and Basic Data portion of the "Cost of Compliance" section, for the purposes of this analysis, the FAA assumed that the average noncertificated maintenance contractor company would have to test an average of 19 employees over the ten years examined by this analysis. Most, if not all, of these companies would be considered small entities.

This proposed rule would cost $3.52 million over ten years ($2.63 million, discounted). Using the assumptions from Table 1, this proposed rule would affect, on average, 306 companies;[67] hence, the cost impact on the average company would be $11,500 ($8,600, discounted). Using the capital recovery rate of 0.14238 yields an annualized cost of about $1,200. The FAA does not know the annual median revenue of these companies, but, given an average of 19 employees who would have to be tested, we believe this annual median revenue is well in excess of $120,000 annually. Since annualized costs would be less than 1% of annual median revenue, the FAA believes that this proposed action would not have a significant economic impact on a substantial number of small entities. The FAA calls for comments on these assumptions, on the annualized cost per company, and on their annual revenue; the FAA requests that all comments be accompanied by full documentation.

VIII. International Trade Impact Statement

The Trade Agreement Act of 1979 prohibits Federal agencies from establishing any standards or engaging in related activities that create unnecessary obstacles to the foreign commerce of the United States. Legitimate domestic objectives, such as safety, are not considered unnecessary obstacles. The statute also requires consideration of

[67] Table 1 shows the number of companies growing by two a year, from 297 in 2004 to 315 in 2013. The mid-point, occurring between 2008 and 2009 would be 306 companies.

international standards and, where appropriate, that they be the basis for U.S. standards. The FAA has assessed the potential effect of this SNPRM and has determined that it would have only a domestic impact and therefore no affect on any trade-sensitive activity.

IX. Unfunded Mandates Determination

The Unfunded Mandates Reform Act of 1995 (the Act) is intended, among other things, to curb the practice of imposing unfunded Federal mandates on State, local, and tribal governments. Title II of the Act requires each Federal agency to prepare a written statement assessing the effects of any Federal mandate in a proposed or final agency rule that may result in an expenditure of $100 million or more (adjusted annually for inflation) in any one year by State, local, and tribal governments, in the aggregate, or by the private sector; such a mandate is deemed to be a "significant regulatory action."

This final rule does not contain such a mandate. The requirements of Title II do not apply.

APPENDIX A

Table A-1 – Additional Testing Costs											
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	Total
Maintenance Workers - Total	218,655	221,935	225,264	228,643	232,073	235,554	239,087	242,673	246,313	250,008	
Maintenance Workers - Affected by this rulemaking	5,466	5,548	5,632	5,716	5,802	5,889	5,977	6,067	6,158	6,250	
Alcohol Misuse Testing											
Pre-employment	18	18	18	19	19	19	19	20	20	20	190
Random	547	555	563	572	580	589	598	607	616	625	5,852
Post-Accident	3	3	3	3	3	4	4	4	4	4	35
Reasonable Cause	2	2	3	3	3	3	3	3	3	3	28
Return to Duty	2	2	2	2	2	2	2	2	2	2	20
Follow-Up - Current Year	10	10	10	10	10	11	11	11	11	11	105
Follow-Up - Next Year	0	10	10	10	10	10	11	11	11	11	94
Total Alcohol Tests	**582**	**600**	**609**	**619**	**627**	**638**	**648**	**658**	**667**	**676**	**6,324**
Antidrug Testing											
Pre-employment	5,466	1,373	1,393	1,414	1,436	1,457	1,479	1,501	1,524	1,546	18,589
Random	1,367	1,387	1,408	1,429	1,451	1,472	1,494	1,517	1,540	1,563	14,628
Post-Accident	7	7	8	8	8	8	8	8	8	8	78
Reasonable Cause	5	5	5	5	5	5	5	5	5	6	51
Return to Duty	11	11	11	11	11	12	12	12	12	12	115
Follow-Up - Current Year	52	53	54	55	55	56	57	58	59	60	559
Follow-Up - Next Year	0	42	42	43	44	44	45	46	46	47	399
Total Antidrug Tests	**6,908**	**2,878**	**2,921**	**2,965**	**3,010**	**3,054**	**3,100**	**3,147**	**3,194**	**3,242**	**34,419**
Cost of Alcohol Testing											
Total Tests	582	600	609	619	627	638	648	658	667	676	6,324
Cost of Test	$19,788	$20,400	$20,706	$21,046	$21,318	$21,692	$22,032	$22,372	$22,678	$22,984	$215,016
Cost of Employee's Time	$14,204	$14,639	$14,858	$15,097	$15,293	$15,556	$15,800	$16,039	$16,258	$16,472	$154,216
Total Cost	**$33,992**	**$35,039**	**$35,564**	**$36,143**	**$36,611**	**$37,248**	**$37,832**	**$38,411**	**$38,936**	**$39,456**	**$369,232**
Cost of Drug Testing											
Total Tests	6,908	2,878	2,921	2,965	3,010	3,054	3,100	3,147	3,194	3,242	34,419
Cost of Test	$310,860	$129,510	$131,445	$133,425	$135,450	$137,430	$139,500	$141,615	$143,730	$145,890	$1,548,855
Cost of Employee's Time	$168,590	$70,216	$71,265	$72,316	$73,414	$74,464	$75,586	$76,708	$77,854	$78,999	$839,412
Total Cost	**$479,450**	**$199,726**	**$202,710**	**$205,741**	**$208,864**	**$211,894**	**$215,086**	**$218,323**	**$221,584**	**$224,889**	**$2,388,267**
Total Cost - New Testing	**$513,442**	**$234,765**	**$238,274**	**$241,884**	**$245,475**	**$249,142**	**$252,918**	**$256,734**	**$260,520**	**$264,345**	**$2,757,499**
Discount Rate	0.9346	0.8734	0.8163	0.7629	0.7130	0.6663	0.6227	0.5820	0.5439	0.5083	
Discounted Cost	**$479,852**	**$205,053**	**$194,503**	**$184,532**	**$175,020**	**$166,014**	**$157,505**	**$149,422**	**$141,706**	**$134,380**	**$1,987,987**

Table A-2 – Costs for Supervisor Training														
Year	Total Supervisors	New Supervisors for training	Turnover	Total for initial training	Cost for supervisor training	Total number of instructors	Cost for instructors	Total for recurrent training	Cost for supervisor training	Total number of instructors	Cost for instructors	Total Cost	Discount rate	Discounted cost
2004	594	594	59	653	$37,436	33	$1,734					$39,170	0.9346	$36,608
2005	598	4	60	64	$3,669	4	$210	534	$20,409	27	$946	$25,235	0.8734	$22,041
2006	602	4	60	64	$3,669	4	$210	538	$20,562	27	$946	$25,387	0.8163	$20,724
2007	606	4	61	65	$3,726	4	$210	541	$20,677	28	$981	$25,594	0.7629	$19,526
2008	610	4	61	65	$3,726	4	$210	545	$20,830	28	$981	$25,747	0.7130	$18,358
2009	614	4	61	65	$3,726	4	$210	549	$20,983	28	$981	$25,900	0.6663	$17,258
2010	618	4	62	66	$3,784	4	$210	552	$21,097	28	$981	$26,072	0.6227	$16,236
2011	622	4	62	66	$3,784	4	$210	556	$21,250	28	$981	$26,225	0.5820	$15,263
2012	626	4	63	67	$3,841	4	$210	559	$21,365	28	$981	$26,397	0.5439	$14,358
2013	630	4	63	67	$3,841	4	$210	563	$21,518	29	$1,016	$26,585	0.5083	$13,514
Total					$71,204		$3,626		$188,692		$8,793	$272,314		$193,887

Table A-3 – Employee Training Cost Variables								
Year	Companies	New Companies	Number of Employees	New Employees	New Employees using Videos	New Employees using instructor	Video Monitors	Instructors
2004	297	297	5,466	5,466	4,373	1,093	219	55
2005	299	2	5,548	82	66	16	4	2
2006	301	2	5,632	84	67	17	4	2
2007	303	2	5,716	84	67	17	4	2
2008	305	2	5,802	86	69	17	4	2
2009	307	2	5,889	87	70	17	4	2
2010	309	2	5,977	88	70	18	4	2
2011	311	2	6,067	90	72	18	4	2
2012	313	2	6,158	91	73	18	4	2
2013	315	2	6,250	92	74	18	4	2

Table A-4 – Employee Training Costs									
Year	Alcohol Program Copying Costs	Alcohol Program Costs for Employees	Antidrug Costs for Employees	Antidrug Costs for Videos	Antidrug Costs for Video Overseers	Antidrug Costs for Instructors	Total Costs	Discount rate	Discounted Costs
2004	$6,559	$88,932	$177,864	$11,880	$5,475	$1,927	$292,636	0.9346	$273,492
2005	$98	$1,334	$2,667	$80	$100	$70	$4,350	0.8734	$3,799
2006	$101	$1,366	$2,733	$80	$100	$70	$4,450	0.8163	$3,632
2007	$101	$1,366	$2,732	$80	$100	$70	$4,448	0.7629	$3,394
2008	$103	$1,398	$2,797	$80	$100	$70	$4,548	0.7130	$3,243
2009	$104	$1,414	$2,828	$80	$100	$70	$4,597	0.6663	$3,063
2010	$106	$1,430	$2,861	$80	$100	$70	$4,647	0.6227	$2,894
2011	$108	$1,463	$2,925	$80	$100	$70	$4,746	0.5820	$2,762
2012	$109	$1,479	$2,958	$80	$100	$70	$4,796	0.5439	$2,608
2013	$110	$1,495	$2,989	$80	$100	$70	$4,844	0.5083	$2,462
	$7,500	$101,676	$203,353	$12,600	$6,375	$2,557	$334,061		$301,350

Table A-5 – Training and Education Costs						
Year	Supervisor Training	Employee Training	Establish Education Programs	Total Costs	Discount Factor	Discounted Costs
2004	$65,284	$292,636	$24,948	$382,868	0.9346	$357,821
2005	$27,821	$4,350	$168	$32,338	0.8734	$28,246
2006	$27,974	$4,450	$168	$32,591	0.8163	$26,604
2007	$28,219	$4,448	$168	$32,835	0.7629	$25,050
2008	$28,372	$4,548	$168	$33,088	0.7130	$23,591
2009	$28,525	$4,597	$168	$33,290	0.6663	$22,182
2010	$28,735	$4,647	$168	$33,550	0.6227	$20,893
2011	$28,888	$4,746	$168	$33,801	0.5820	$19,673
2012	$29,098	$4,796	$168	$34,061	0.5439	$18,527
2013	$29,286	$4,844	$168	$34,298	0.5083	$17,435
Totals	$322,200	$334,061	$26,460	$682,722		$560,023

Table A-6 - Program Development & Maintenance Costs						
		New Registration Information				
Year	Develop Plan	Company	FAA	Total Costs	Discount Factor	Discounted Costs
2004	$99,792	$2,079	$1,122	$102,993	0.9346	$96,255
2005	$672	$154	$83	$909	0.8734	$794
2006	$672	$154	$83	$909	0.8163	$742
2007	$672	$154	$83	$909	0.7629	$693
2008	$672	$154	$83	$909	0.7130	$648
2009	$672	$154	$83	$909	0.6663	$606
2010	$672	$154	$83	$909	0.6227	$566
2011	$672	$154	$83	$909	0.5820	$529
2012	$672	$154	$83	$909	0.5439	$494
2013	$672	$154	$83	$909	0.5083	$462
Totals	$105,840	$3,465	$1,869	$111,174		$101,790

Table A-7 – Annual Documentation Category Costs												
Report Category	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	Total	Present Value
Supervisor Training Documentation-Drugs	$840	$769	$774	$779	$784	$789	$795	$800	$805	$810	$7,945	$779
Supervisor Training Documentation-Alcohol	$840	$82	$82	$82	$84	$84	$84	$85	$85	$86	$1,593	$1,293
Employee Training Documentation-Drugs	$7,028	$105	$108	$108	$111	$112	$113	$116	$117	$118	$8,036	$7,246
Reasonable Suspicion Doc.	$112	$113	$113	$114	$114	$116	$117	$117	$118	$118	$1,153	$807
Post-Accident Determination Doc.	$98	$98	$99	$99	$100	$100	$102	$102	$103	$103	$1,003	$702
Post-Accident 2-Hour Alcohol Limit No-Test Documentation	$105	$107	$107	$108	$108	$109	$109	$111	$111	$112	$1,087	$761
Post-Accident 8-Hour Alcohol Limit No-Test Documentation	$105	$107	$107	$108	$108	$109	$109	$111	$111	$112	$1,087	$761
Refusal to Take Drug Test Report	$11	$11	$11	$11	$11	$11	$11	$11	$11	$11	$105	$74
Part 67 Positive Drug Test Report	$11	$11	$11	$11	$11	$11	$11	$11	$11	$11	$105	$74
Refusal to Take Alcohol Test Report	$5	$5	$5	$5	$5	$5	$5	$5	$5	$5	$53	$37
Part 67 Positive Alcohol Test Report	$5	$5	$5	$5	$5	$5	$5	$5	$5	$5	$53	$37
Total Costs	**$9,062**	**$1,315**	**$1,322**	**$1,333**	**$1,340**	**$1,351**	**$1,360**	**$1,370**	**$1,379**	**$1,388**	**$21,220**	**$9,062**
Discount Rate	0.9346	0.8734	0.8163	0.7629	0.7130	0.6663	0.6227	0.5820	0.5439	0.5083		0.9346
Discounted Costs	**$8,469**	**$1,148**	**$1,080**	**$1,017**	**$956**	**$900**	**$847**	**$797**	**$750**	**$706**	**$16,669**	**$8,469**

Table A-8 – Total Ten Year Costs							
Year	Testing	Training and Education	Program Development & Maintenance	Annual Documentation	Total Costs	Discount rate	Discounted costs
2004	$513,442	$356,755	$102,993	$9,062	$982,251	0.9346	$917,992
2005	$234,765	$29,752	$909	$1,315	$266,741	0.8734	$232,982
2006	$238,274	$30,005	$909	$1,322	$270,511	0.8163	$220,817
2007	$241,884	$30,211	$909	$1,333	$274,337	0.7629	$209,290
2008	$245,475	$30,464	$909	$1,340	$278,188	0.7130	$198,344
2009	$249,142	$30,665	$909	$1,351	$282,067	0.6663	$187,953
2010	$252,918	$30,887	$909	$1,360	$286,074	0.6227	$178,152
2011	$256,734	$31,139	$909	$1,370	$290,152	0.5820	$168,871
2012	$260,520	$31,361	$909	$1,379	$294,169	0.5439	$160,008
2013	$264,345	$31,597	$909	$1,388	$298,239	0.5083	$151,610
Total	$2,757,499	$632,836	$111,174	$21,220	$3,522,728		$2,626,020
Present Value	$1,987,985	$519,576	$101,790	$16,669			

Table A-9 - Benefits of Avoiding Accidents That May Have Been Caused by the Use or Misuse of Drugs or Alcohol							
Year	Avoiding Fatalities	Avoiding Serious Injuries	Avoiding Minor Injuries	Avoiding Replacing an Aircraft	Total Benefits	Discount Rate	Discounted Benefits
2004	$750,000	$0	$0	$3,364	$753,364	0.9346	$704,079
2005	$750,000	$0	$0	$3,364	$753,364	0.8734	$658,017
2006	$750,000	$0	$0	$3,364	$753,364	0.8163	$614,969
2007	$750,000	$0	$0	$3,364	$753,364	0.7629	$574,738
2008	$750,000	$0	$0	$3,364	$753,364	0.7130	$537,138
2009	$750,000	$0	$0	$3,364	$753,364	0.6663	$501,998
2010	$750,000	$0	$0	$3,364	$753,364	0.6227	$469,157
2011	$750,000	$0	$0	$3,364	$753,364	0.5820	$438,465
2012	$750,000	$0	$0	$3,364	$753,364	0.5439	$409,780
2013	$750,000	$0	$0	$3,364	$753,364	0.5083	$382,972
Total	$7,500,000	$0	$0	$33,640	$7,533,640		$5,291,313

Table A-10 Percentage of Alcohol Violation Test Results – 1999-2001	
Flight Crew	0.08%
Flight Attendants	0.37%
Flight Instructors	0.18%
Aircraft Dispatchers	0.20%
Maintenance Personnel	0.24%
Aviation Screeners	0.14%
Ground Security Coordinators	0.23%
Air Traffic Controllers	0.22%
TOTAL	0.23%

Table A-11 Percentage of Positive Drug Tests – 1999-2001	
Flight Crew	0.06%
Flight Attendants	0.51%
Flight Instructors	0.16%
Aircraft Dispatchers	0.97%
Maintenance Personnel	1.42%
Aviation Screeners	2.56%
Ground Security Coordinators	0.79%
Air Traffic Controllers	0.26%
TOTAL	1.14%